

REMARKS

The Office Action dated January 21, 2010, has been received and carefully noted. The above amendments and the following remarks are being submitted as a full and complete response thereto. Claims 9 and 13-21 are pending in this application, and claims 1-8 are withdrawn. By this Amendment, the Abstract, claims 9, 13, 15 and 20 are amended, and claims 10-12 are cancelled without prejudice to or disclaimer of the subject matter disclosed therein. The Abstract and claims 13 and 20 are amended for clarification purposes only. Support for the subject matter of the amendments to claims 9 and 15 can be found in the Drawings at, for example, Figs. 9A and 9B. No new matter has been added. Reconsideration of the application is respectfully requested.

The Office Action objects to the Specification because the Abstract contains more than 150 words. The Abstract is amended to overcome the objection. Accordingly, withdrawal of the objection to the Specification is respectfully requested.

The Office Action objects to claim 15. Applicants assert that the recitation in claim 15 is accurate, as supported in the Specification at, for example, page 5, lines 24-25 and at page 8, lines 21-23. Accordingly, withdrawal of the objection to claim 15 is respectfully requested.

The Office Action rejects claims 9-16 under 35 U.S.C. §103(a) as being obvious over Konold (U.S. Patent Application Publication No. 2002/0121298) in view of Nomiya (JP 2003-137199) and Nishio et al. (U.S. Patent Application Publication No. 2002/0189792); and claims 17-21 under 35 U.S.C. §103(a) as being obvious over

Konold and Nomiya in view of Uroshevich (U.S. Patent No. 4,388,481). Applicants respectfully traverse the rejections.

In particular, the current application claims a thermoelectric hybrid solar battery system that includes a solar battery panel receiving sunlight on a light receiving surface thereof, a plate-shaped heat pipe having a first plate formed by a first thin metal foil, a first pressure-proof structural plate member on the first plate, a plate wick generating capillary force on the first pressure-proof structural member, a second pressure-proof structural plate member on the plate wick, and a second plate formed by a second thin metal foil, a cavity being defined between the second pressure-proof structural plate member and the second plate, an end of the first plate being affixed to a back surface of the light receiving surface of the solar battery panel, liquid having a high latent heat and introduced in the heat pipe being heated at the end of the first plate, the heated liquid being circulated in a path defined by an end of the plate wick corresponding to the end of the first plate, the cavity, an opposite end of the plate wick, inside the plate wick, and back to the end of the plate wick, and a hot water generation part, as recited in amended claim 9.

Konold teaches an apparatus for converting solar energy to thermal and electrical energy that includes a photovoltaic grid for converting the concentrated solar energy into electrical energy (Abstract). The Office Action associates Konold's photovoltaic unit 101 to the claimed solar battery panel, and the heat exchanger segment 102 to the claimed heat pipe (Office Action, page 3, lines 5-8). Konold also teaches that the heat exchanger segments 102, 204 and 800 accommodate any non-corrosive liquid (paragraph [0038]). However, a closer examination of Konold reveals

that there is no teaching in Konold of the heat exchanger segments 102, 204 or 800 to have a plate-shaped heat pipe having a first plate formed by a first thin metal foil, a first pressure-proof structural plate member on the first plate, a plate wick, a second pressure-proof structural plate member on the plate wick, and a second plate formed by a second thin metal foil, liquid having a high latent heat and introduced in the heat pipe at the end of the first plate, the heated liquid being circulated in a path defined by an end of the plate wick corresponding to the end of the first plate, a cavity, an opposite end of the plate wick, inside the plate wick, and back to the end of the plate wick, as recited in amended claim 9. Accordingly, amended claim 9 is patentable over Konold.

Nomiyama teaches a solar battery having a plurality of solar battery cells arranged on a surface of a support plate (Abstract), but fails to cure the deficiencies in Konold in disclosing or rendering obvious the above-discussed features of amended claim 9.

Nishio teaches a forced oscillatory flow type heat pipe where a ratio of the heat transport capacity to the oscillating energy is maintained within a range (Abstract), but fails to cure the deficiencies in Konold in disclosing or rendering obvious the above-discussed features of amended claim 9.

Uroshevich teaches a concentrating photovoltaic collector comprising an elongated deep reflector and an elongated series of photovoltaic cells (Abstract), but fails to cure the deficiencies in Konold in disclosing or rendering obvious the features of claims 17-21, including the above-discussed features of amended claim 9.

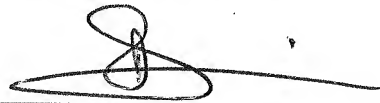
For at least a combination of the reasons above, none of the applied references, alone or in combination, disclose or suggest the features of amended claim 9.

Accordingly, amended claim 9 is patentable over all the applied references. Claims 13-21, at least for being dependent on patentable claim 9, are also patentable over all the applied references. Accordingly, all the pending claims are patentable, and withdrawal of the rejections of the claims under 35 U.S.C. §103(a) is respectfully requested.

Should the Examiner determine that any further action is necessary to place this application into better form for allowance, the Examiner is encouraged to telephone the undersigned representative at the number listed below.

Any fees for such an extension, together with any additional fees that may be due with respect to this paper, may be charged to counsel's Deposit Account No. 01-2300, referencing Attorney Docket No. 103203-00014.

Respectfully submitted,



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Attachment: Substitute Abstract

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